Correspondence

Is there a role for stress CMR in stable chest pain with >60% predicted risk of coronary artery disease?

Sir,

The 2010 NICE guidelines on stable chest pain of recent origin have revolutionized its management. The management strategy is based on the estimated likelihood of coronary artery disease (CAD) using age, sex, risk factors and the character of chest pain. Functional imaging (for e.g. stress CMR/stress echo/myocardial perfusion scintigraphy) is only recommended in the group with predicted risk between 30% and 60%. The recently published CE-MARC study has shown that stress CMR is superior to SPECT in assessment of stable chest pain. In the CE-MARC study the overall X-ray angiography proven CAD prevalence was 39% in the study group (average age of 60 years and at least 1 risk factor). The age, risk factor and typicality of chest pain would put the estimated pre-test likelihood of CAD >60% for most of the study population where the recommended investigation is X-ray angiography. Hence the study hints towards a possible role of CMR in assessment of patients with predicted CAD risk >60% thereby avoiding unnecessary invasive angiography. With this background we aimed to assess whether stress CMR has any role in patients with >60% predicted risk of CAD, where the recommended investigation is invasive coronary angiography.

We retrospectively reviewed CMR scans of all patients who were referred from the rapid access chest pain clinic for both CT coronary angiogram and stress CMR, as part of a cost-effectiveness study, over a period of 2 years, from 2010 to 2011. Patients were excluded if they had contraindications to MRI or if they had previous history of myocardial infarction or any form of prior revascularization (Angioplasty/CABG). All CMR scans were performed at 1.5T (Achieva, Philips Medical Systems). A cardiologist with over 10 years CMR experience reviewed all adenosine stress perfusion CMR images.

We reviewed 93 patients (38 female) with mean age of 53.3 years (± 14.3 SD) and 68% with at least 1 risk factor. The entire dataset were divided into 4 groups based on their predicted CAD risk of <10%, 10–29%, 30–60%, >60% according to the NICE guidance. Only 8 out of 35 with >60% predicted CAD risk had perfusion defects, similar to the group with 30–60% predicted risk (8 out of 28 patients, P=ns). In addition, unknown extracoronary cardiac pathology was identified in 9/93 (8 HCM, 1 myocarditis) and unknown LV impairment in 7/93 (6 mild/1 severe).

In our audit we found a higher than expected frequency of negative or normal stress CMR in patients with >60% predicted risk of CAD. In these patients invasive coronary angiography could be avoided. In addition, CMR can identify unknown extracoronary cardiac pathology and LV or RV wall motion abnormalities. We propose a larger, prospective multicentre study to confirm the definitive role of stress CMR in patients with pre-test probabilities of CAD >60%.

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